Volume I, Section 3 – COD Overview

Common Origination and Disbursement:

The Common Origination and Disbursement (COD) System was implemented in April 2002 by the Office of Federal Student Aid (FSA). The COD System is FSA's first step toward achieving two of the organization's enterprise wide goals: to increase customer satisfaction and to reduce costs by modernizing business processes. COD has re-engineered the former process of delivering and reporting Federal Pell Grants and Direct Loans from two processes into one Common Origination and Disbursement Process.

COD provides a common process and an integrated system that enables efficient delivery of Title IV Funds. COD allows for:

- Common Processing:

    o One process and record for submitting origination and disbursement data

    o Edits that are common across the Pell Grant and Direct Loan programs

    o Data tags that are common across the Pell Grant and Direct Loan programs, and are (approaching) a cross-industry standard for data definitions

    o Elimination of duplicate data reporting for Pell Grants and Direct Loans

- Streamlined edits to reduce turnaround time for exception processing

- Expanded online capability to make corrections/changes, to process "emergency" requests, and to check transmission status

In general, the COD Process is a simplified process for requesting, reporting, and reconciling Title IV funds.

Beginning in award year 2005-2006, all schools participating in Title IV Federal Student Aid using the Common Origination and Disbursement (COD) System to process Federal Direct Loans and Federal Pell Grants will be Full Participants.

Full Participation:

A Full Participant uses the Common Record in XML format to submit Pell Grant and/or Direct Loan origination and disbursement data to the COD System.

COD Full Participants may submit data to the COD system in award year 2005-2006 in two ways:

- Batch processing of Common Record documents over the Student Aid Internet Gateway (SAIG).

- Entry of Common Record data using the COD web site.

Schools that use EDExpress to submit Pell Grant and Direct Loan data are Full Participants.

Full Participants should refer to the 2005-2006 COD Technical Reference, Volume II - Common Record Full Participant Technical Reference for record layouts and processes.

COD Customer Service

The COD School Relations Center integrates customer service for the Direct Loan and Pell Grant Programs for ALL award years.

All schools should use the numbers or email address listed below for assistance:

- For Pell Grant assistance: 1-800-474-7268

- For Direct Loan assistance: 1-800-848-0978

- CODSupport@acs-inc.com

- Transmit all batch files to the SAIG mailbox to be forwarded to COD to be processed

- Perform on-line PLUS Credit Checks for all program years on the COD web site at:

    www.cod.ed.gov

- Mail all Promissory Notes to:

    US Department of Education
    P.O. Box 5692
    Montgomery, AL 36103-5692

- Send Promissory Notes overnight to:

    US Department of Education
    201 TechnaCenter Drive
    Montgomery, AL 36117

- Return Refunds of Cash for Direct Loans to:

    COD School Relations Center
    P.O. Box 9001
    Niagara Falls, NY 14302
    Note: Schools must specify the award year and their school code.

- Return Refunds of Cash for Pell Grants to:

    Funds should be returned using the Electronic Refund function in GAPS. The Electronic Refund function can be accessed from the GAPS 'Main Menu"

    As an alternative, the Department will continue to accept refund checks at the following address:

    US Department of Education
    P.O. Box 952023
    St. Louis, MO 63195-2023

- Request Direct Loan Bulk Mail by:

    US Department of Education
    P.O. Box 5692
    Montgomery, AL 36103-5692

- Submit Master Promissory Notes (MPNs) printed by the school for COD test and review only to:

> US Department of Education
> P.O. Box 5691
> Montgomery, AL 36103

Note: All documents and shipping packages should be clearly marked "For Testing Only".

COD Overview for Full Participants

The Common Origination and Disbursement Process for Full Participants utilizes one single record across programs for both origination and disbursement. Full Participants use a Common Record, one that uses common data elements, definitions, edits, and structure for Pell Grants and Direct Loans. Although the record has the same layout for all programs, not all data elements are required for each transmission. This new record layout relies on a new technology called the e**X**tensible **M**arkup **L**anguage, or XML.

Currently the Common Record only supports the submission of Pell Grant and Direct Loan aid data. However, the flexible nature of the Common Record format makes it easily adaptable for future use throughout the financial aid community. If desired by program administrators, the Common Record could eventually even support the submission of state grants, FFEL, alternative loans, etc.

The Common Record was developed in partnership with members of the National Council of Higher Education Loan Programs (NCHELP) and the Postsecondary Electronic Standards Council (PESC). This collaborative effort enables the Common Record to bring consistency and standardization to the transmission of student financial aid data. The Common Record also provides a structure to allow for the addition of FFEL data if desired. Thus, the inherent processing efficiencies of the COD process will also be available to FFEL schools as the FFEL trading partners adopt this format.

What is XML?

XML stands for e**X**tensible **M**arkup **L**anguage. XML is a recommendation by the World Wide Web Consortium (W3C) for how to represent structured information in a text-based format. XML is a markup language whose roots originate in HTML and SGML. Like HTML, XML consists of elements that are defined by tags. A start tag containing a name precedes element data. An end tag follows it. While HTML tags have a specific meaning and generally describe how the text between them should look, XML uses tags only to delimit pieces of data and leaves

the interpretation of the data completely to the application. The tags identify data elements and provide metadata, or meaning, for the information that appears between the tags.

The textual and self-describing nature of XML makes its platform independent and very flexible in terms of content. It is an open standard for storing, publishing, and exchanging any kind of information between any number of disparate systems. As long as two parties agree on and adhere to a common data structure, they can transfer information to each other without any knowledge of the other party's operating system, database type or programming language. XML can be used in conjunction with HTML to store data within standard web pages. It can also be used to store data in files and to pull information from disparate, incompatible databases.

One of the objectives behind the design of the COD Process and System was to provide FSA and our partnering student aid schools greater flexibility in record processing, i.e., opportunities for multiple data cross-walks. The COD Process could serve as a technological foundation for future FSA integration initiatives. Given these objectives, XML was the logical choice for the Common Record's format and structure. XML offers the flexibility to design records, known as XML documents, particular to an audience or community. It allows increased access to and reuse of information. It supports validation [edits] by checking structural validity and flagging errors. It also enables systems to share information and users to see different views of available data.

XML 101

XML technology allows a common data packet structure to be used between two disparate systems. It is a markup language that defines data structure. An XML document is the vehicle through which data is transmitted. It can be thought of as a batch.

XML documents are comprised of markup and content. Markup defines the content. For example, Last Name is the markup describing Jones.

<LastName>Jones</LastName>

<LastName> is a start tag. Note the presence of brackets. Last Name is an element. Jones is the data, or XML content. </LastName> is an end tag.

Elements can be either complex or simple. A complex element is a grouping of attributes or other elements. The Common Record is a logical grouping of complex elements. In the following example, the Complex Element is bolded.

Complex Element:

- o **<Name>**

- <FirstName>Heidi</FirstName>

- <LastName>Smith</LastName>

o **</Name>**

A simple element refers to the value that is contained within tags. In the following example, a Simple Element is bolded.

<u>Simple Element:</u>

o <Name>

- **<FirstName>Heidi</FirstName>**

- <LastName>Smith</LastName>

o </Name>

Fixed-Format Files vs. XML Documents

Fixed-format files have been used as vehicles through which data can be exported and imported to business applications. Fixed-format files contain a sequence of fields that is in machine-readable language. An example of a comma-separated fixed-format file follows:

Sally, A, Smith, 299999999, 1979-02-03, IN, DL222222, false, P, 417 Halper Road, Fort Wayne, IN, 46807, Allen, USA, 2197999999, <u>sally.a.smith@email.net</u>, 1, 221784902

In the above comma-separated fixed-format file, it is impossible for a human to understand what the data means. There is also no way to validate the document to make sure that the data is represented in a format that can be read by the receiving application.

XML is a language that is not only machine readable, but also human readable. It also has a mechanism to ensure the validity of the document format through the use of XML Schemas. As a result, business applications are rapidly moving toward the use of XML to exchange data. The following example demonstrates that XML not only represents data in a human readable text format, but also provides meaning to the data through the use of tags. This is how a Student record would be represented in XML:

<Student SSN="299999999">

```
<Identifiers>
        <DriversLicense>
                <DriversLicenseState>IN</DriversLicenseState>
                <DriversLicenseNumber>DL222222</DriversLicenseNumber>
        </DriversLicense>
</Identifiers>
<BirthDate>1979-02-03</BirthDate>
<Name>
        <FirstName>Sally</NameFirst>
        <MiddleInitial>A</MiddleInitial>
        <LastName>Smith</LastName>
</Name>
<Contacts>
        <Address>
                <AddressFormatIndicator>false</AddressFormatIndicator>
                <AddressTypeCode>P</AddressTypeCode>
                <AddressLine>417 Hapler Road</AddressLine>
                <AddressCity>Fort Wayne</AddressCity>
                <AddressStateProvinceCode>IN</AddressStateProvinceCode>
                <AddressPostalCode>46807</AddressPostalCode>
                <AddressCounty>Allen</AddressCounty>
                <AddressCountryCode>USA</AddressCountryCode>
        </Address>
        <PhoneNumber>2197999999</PhoneNumber>
        <EmailAddress>sally.a.smith@email.net</EmailAddress>
</Contacts>
<CitizenshipStatusCode>1</CitizenshipStatusCode>
<NoteMessage>PID=221784902</NoteMessage>
```

Common Record Structure

The XML document called the Common Record is composed of different information modules, referred to as complex elements or blocks. Data fields within the blocks emphasize similarities across programs and contain information such as: document or batch information, school or entity information, person information, award or origination information, disbursement information, and the response status of the record.

A general rule regarding sequence of data within blocks, and within complex elements: the start and end data tags and their content must be presented on the XML document within the block's tags or the complex element tags to which they belong. The sequence of the data within that block or element is dictated by the sequence of the data tags presented in the XML Common Record Schema. For example, if a complex element has ten simple elements within it, those ten elements must occur in the same sequence as depicted in the XML Common Record Schema.
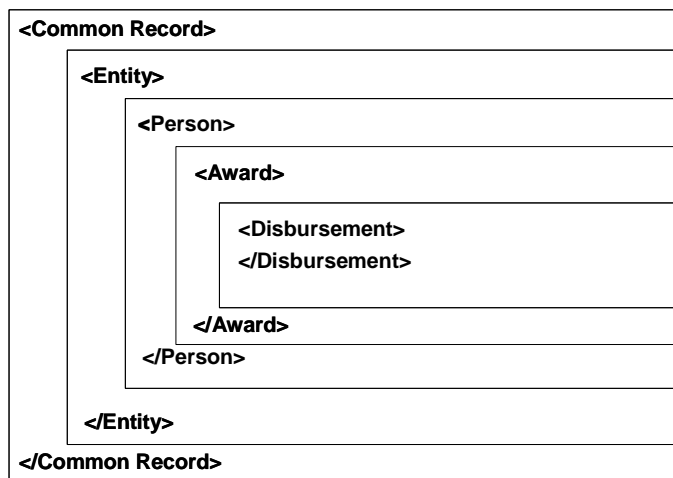
The Common Record is organized into the following structure:

Quick Reference Block Description

	Block Name	Block Description
1	Document Information	The Document Information Block contains information that was previously associated with a batch. It contains a date/time stamp, document validation information, summary level document information, as well as the source of the document. This block occurs once per XML Document or submission.
2	Entity Information	The Entity Information Block contains information about the reporting and attending school. This block occurs once per reporting entity or school within the XML Document or submission.
3	Person Information	The Person Block contains student or PLUS borrower information. This block occurs once per person.
4	Award Information	The Award Information Block contains Direct Loan and Pell Grant award information, similar to origination data submitted in the fixed-length record layouts. As other partners use the Common Record to transport data, this will be the location of those awards. This block occurs once per award per person.
5	Disbursement Information	The Disbursement Information Block contains Direct Loan and Pell Grant disbursement information. This block occurs once per disbursement.
6	Response	A Response block is nested within each block. The Response block is returned by COD to the submitting entity upon processing the Common Record. The Response block contains information about processing edits and document status.

Below is a pictorial representation of the Common Record layout. It illustrates how the Common Record is comprised of information modules or blocks.

The Common Record Document Structure

```
<Common Record>
    <Entity>
        <Person>
            <Award>
                <Disbursement>
                </Disbursement>
            </Award>
        </Person>
    </Entity>
</Common Record>
```

These information modules or blocks may be reused many times in the same record in order to transmit data for multiple awards and multiple disbursements for one or multiple students by one or multiple Attended Schools.

For participating schools, software developers, and third party servicers, the transition to XML may initially require an investment of resources to build the Common Record. However, reformatting in subsequent years will take considerably less time and effort than currently required for updating fixed-format files.

XML Schema
An XML Schema specifies the rules surrounding the logical structure of an XML document. It is a language that describes the allowed content of documents. It defines the elements present in the document and the order in which they appear, as well as any attributes that may be associated with an element.

To support the open standards proven effective in the development of the Common Record, FSA is making the XML Schema for the Common Record available electronically to all interested parties. Whether a school, a software provider, or a third party servicer is using it for product development to support COD or any student financial resource trading partner is interested in incorporating the Common Record into their products and services, the updated schema is available on the web at:

- http://ifap.ed.gov, under Common Origination and Disbursement (COD). (For the most recent, please select the appropriate award year.)

XML Resources

Extensible Markup Language (XML) is a growing standard for e-commerce, data transmissions and structured documents using the Internet. Many industry groups are developing schemas and data dictionaries for this purpose. As a result, there is extensive information available about XML and the initiatives specific to the higher education community. Many institutions are already using XML for their own Internet initiatives, including self-service applications for students, faculty, and staff; data exchanges both within and outside the school; and even data coordination or backup with data warehouse projects.

Available resources about XML include courses at many institutions and local or Internet bookstores. The Web is also a resource, including the sites mentioned below. The first three are international standards bodies, and the last is specifically for the schema and data dictionary for higher education.

- http://www.w3.org

- http://www.ebXML.org

- http://www.oasis-open.org

- http://www.PESC.org

The following web addresses were shared at the Higher Education Washington, Inc. conference in September 2001. This updated list was provided by the Office of FSA CIO:

- IBM's Introduction to XML: www-106.ibm.com/developerworks/xml/

- Sun's XML & Java Technologies: http://java.sun.com/xml

- The XML Industry Portal: www.xml.org

- XML Related Software: www.xmlsoftware.com/

- Web Reference: Exploring XML: www.webreference.com/xml/

- XML Information: html.about.com/cs/xmlinformation

- O'Reilly XML.com: www.xml.com

- The XML FAQ: www.ucc.ie/xml

Literature is constantly being updated as new technologies develop and mature. Therefore, it is recommended that time be spent exploring these resources.

Common Record Process
This walkthrough of the Common Record Process applies to Full Participants for the 2005-2006 award year. This section addresses at a high level the processing of the Common Record from the institution perspective.

The COD Process is comprised of the following steps:

1. Common Record Submission
2. Common Record Receipt
3. Common Record Processing
4. Common Record Editing
5. Response Notification

Note: This overview of the COD Process will not cover the entire cycle for a school. There are items that take place prior to the submission of records (i.e. packaging) that are not explained in this document.

1. Common Record Submission
The COD Process begins when a Full Participant school submits a Common Record. For the 2005-2006 award year, the Common Record is submitted by Full Participants in one of two ways:

- Batch Submission via SAIG

- On-Line Submission via the COD web site

Batch Submission
All Common Records sent in batch mode are submitted to COD's Student Aid Internet Gateway (SAIG) mailbox. The Enterprise Application Integration Bus (EAI Bus) performs periodic sweeps of COD's SAIG mailbox and transmits the Common Record data to the COD System.

On-Line Submission
A COD Full Participant can enter data online via the COD web site. The COD web site creates a Common Record document for data entered online and sends it directly to the COD System.

2. Common Record Receipt

After the COD System receives the Common Record, the COD System generates a receipt. The receipt is transmitted from the COD System to the source entity in the same manner that the Common Record was submitted. For example,

- For Common Records received by the COD System via batch processing, the receipt is transmitted to the EAI Bus. The EAI Bus routes the receipt to the SAIG Destination Mailbox indicated in the SAIG Transmission Header and Trailer.

- For Common Record data entered via the COD web site, the receipt is returned to the COD web site.

For examples of Common Record receipts, please refer to Volume VI, Section 6 of this Technical Reference.

3. Common Record Processing

After the COD System transmits a receipt the COD System classifies the record to determine how it is to be processed. The types of records are:

- New Record

- Update Record

New Record

A New Record establishes a new student, award or disbursement on the COD System. There are three types of new records:

- *New Student w/ New Award* – If the student identifier does not match any previously submitted to the COD System, then the record is considered a New Student. A student cannot be established on the COD database without establishing an award for the student. Therefore, any New Student Record must contain a New Award Record. The Student Identifier submitted by a school to establish the student on COD is matched to data from the Central Processing System (CPS).

    o For Pell Grants, the current SSN, current Date of Birth, and first two characters of the current Last Name are matched with CPS data.

    o For Direct Loans, the current SSN and current Date of Birth are matched with CPS data.

Note: For Direct Loan PLUS Awards the student is established and the person (parent borrower) must be established. Parent borrowers are not matched against data from the CPS.

- *New Award* – If the student identifier matches a person already established on the COD System, then the system checks (Financial Award Type, Financial Award Year, Attended Entity ID, Reporting Entity ID, and Financial Award ID [for Direct Loans]) to determine if the award is already on file. If not, then the record is considered a New Award.

- *New Disbursement* – If the person and award already exist on the COD System, then the system checks the disbursement number submitted for the award. If it is not already on file, then the system logs the disbursement as a new disbursement. There are two types of disbursement records:

  o *Actual Disbursement* - Actual Disbursement Records contain a Disbursement Release Indicator = "True". The Disbursement Release Indicator is a tag on the Common Record that signals to the COD System that the disbursement information is an actual disbursement. It either releases funds available to a school via drawdown or FedWire/ACH, or substantiates cash already made available to the school. These records do affect the Current Funding Level (CFL) calculation for the school. This can be thought of as the actual disbursement record in the old fixed-length record process.

  o *Edit Only* - Edit Only Records contain a Disbursement Release Indicator = "False" or omitted. These disbursements are not considered Actual Disbursements, therefore, they do not substantiate drawdowns. These records do not affect the CFL calculation for the school. This can be thought of as anticipated or pended disbursement information in the old fixed-length record process.

Update Record
An Update Record performs a change to information or elements that were previously established on the COD System by a New Record. There are two types of Update Records:

- *Update Record* - An Update Record performs a change to a non-monetary data element that was previously established by a New Record or is used to change disbursement amounts and dates that occur prior to substantiating drawdowns.

- *Release Record* - A Release Record can be submitted to the COD System with a Disbursement Release Indicator = "True" for a disbursement record previously submitted

as an Edit Only Record. Data elements can be changed via the COD web site or by resubmission of a Common Record.

4. Common Record Editing

Once the Common Record is received and has been classified, the COD System performs a series of valid format and content edits to determine if the file is suitable for further processing.

The COD System performs three types of edits:

- *Correction* – For Pell Grant data, if the Full Participant school selects this option, the system automatically corrects the data and sends a response to the entity that submitted the record indicating that a correction took place, the element corrected, the original value, and the corrected value. The default option in the COD System for all schools is set to 'correct'. If a school wants to have COD reject data instead of correcting it, then it must contact the COD School Relations Center to request that FSA make this change.

  Note: The COD System does not correct Direct Loan data.

- *Warning* – The COD System sends a response to the entity that submitted the record indicating a warning, the warning code and the relevant element. The record continues to be processed by the COD System.

- *Reject* – The COD System sends a response to the entity that submitted the record indicating the reject code, the reject reason(s) and the relevant element(s). The record requires action from the school to continue processing.

Where possible, COD uses information from CPS as a basis for these edits. COD receives the Abbreviated Applicant file from CPS on a daily basis. This file is used to:

- Confirm a valid ISIR is on file (if applicable) and,

- Pull student level information required for Common Record processing.

The COD System performs edits on the Document, Entity, Person, Award and Disbursement levels of the Common Record data. Data that passes edits is accepted and continues to be processed while data that does not pass edits is rejected. The COD System stores rejected data and associated reject reasons. Rejected data is held for corrective action to be taken by the school. Data can be corrected via Common Record re-submission or via the COD web site. The COD System then returns a response record notifying the school of the edit results.

Note: The Common Record can be re-sent in its entirety or sent with just the key identifiers, minimum data elements required for processing, and those data elements that have changed.

5. Response Documents

For all Common Records received and processed by the COD System, the COD System returns a Response document indicating the status of the Common Record processing, including any rejected data elements and the reason for the rejection. If the Common Record was accepted, then the Response document indicates that the record was accepted.

The COD System sends one Response document for each Common Record document submitted. For Common Records that are transmitted via the SAIG, the COD System sends Response documents to the school's SAIG mailbox. For Common Record data entered into the COD web site, schools have an option to receive a Response document either via the COD web site or via their SAIG mailbox.

For Responses received via the SAIG mailbox, schools also have the option to receive a Full or a Standard Response to Common Records processed by the COD System. A Full Response contains all the original tags sent by the school and the rejected data elements and reason codes. A Standard Response contains only the rejected data elements and reason codes.

For further information regarding record layouts and processes, Full Participants should refer to the 2005-2006 COD Technical Reference, Volume II – Common Record Full Participant Technical Reference. For examples of COD Response Documents, please refer to Volume VI, Section 6 of this Technical Reference. If you use a combination of EDExpress and another system, please refer to Volume III – Direct Loan and Pell Grant Combination System for record layouts, processes, and edits pertinent to working in a combination system.